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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/511,747	03/10/2005	Ian Ralph Collins	608-443	5009
23117	7590	08/09/2006	EXAMINER	
NIXON & VANDERHYE, PC 901 NORTH GLEBE ROAD, 11TH FLOOR ARLINGTON, VA 22203			FIGUEROA, JOHN J	
			ART UNIT	PAPER NUMBER

1712

DATE MAILED: 08/09/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/511,747

Applicant(s)

COLLINS ET AL.

Examiner

John J. Figueroa

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 30-58 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 30-58 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____. |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>10/18/2004</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Election/Restrictions

1. Upon reconsideration, the lack of unity requirement that was previously presented to Applicant by phone on July 11, 2006 has been withdrawn.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

3. Claim 52 is rejected under 35 U.S.C. 102(e) as being anticipate by USPN 6,380,136 B1 to Bates et al., hereinafter 'Bates'.

Bates discloses a method of inhibiting scale formation comprising injecting the scale inhibitor into a formation in the form of particles in a liquid suspension/dispersion in an oil (10-50% particles by weight), shutting the well to permit "percolation, followed by the controlled release of the scale inhibitor into the formation. (Col. 1, lines 42-64; col. 10, lines 1-39; See, Examples 1 and 12)

Thus, the claim is anticipated by Bates.

Claim Rejections - 35 USC § 103

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 103 that form the basis for the rejections under this section made in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 30-58 are rejected under 35 U.S.C. 103(a) as unpatentable over United States Patent Number (USPN) 5,089,150 to Hen, hereinafter 'Hen', in view of Bates.

Hen discloses a method of injecting a scale inhibitor formed by crosslinking a carboxylic acid-containing inhibitor (such as an alpha, beta unsaturated carboxylic acid or a polyacrylic acid having weight of 1000 to 5000), or an organophosphorous-containing inhibitor, with a polyalcohol (such as ethylene glycol, glycerol, polyvinyl alcohol or copolymers of vinyl alcohol) to provide an esterifiable crosslinked polyol-scale inhibitor, wherein the life of the scale inhibitor is extended due to the crosslinking with the polyalcohol. (Abstract; col. 2, lines 16-49; col. 3, lines 11-31 and 48-56; See, Example 1 disclosing a polyacrylic acid crosslinked with glycerol)

Hen discloses that when the inhibitor is a copolymer, the other component can be an alpha, beta-ethylenically unsaturated monomer containing olefinic, nonpolar, polar or ionic functional groups, such as styrenesulfonic acid or AMPS® (2-acrylamido-2-methylpropane sulfonic acid); wherein said scale inhibitors have a molecular weight that ranges from 200 to about 20,000. (Col. 3, line 48 to col. 4, line 5)

In Example 1, Hen discloses preparing a crosslinked polyol-scale inhibitor by a process comprising heating in a water-containing solution mixture of polyacrylic acid monomers with glycerol to form a viscous (macrogel) of cross-linked products of 22 cps to 2000 cps. A desired viscosity (suspension or solution) can be obtained depending on the duration of the heating step, temperature and choice of catalyst. (Col. 3, lines 40-47)

Hen discloses in Example 1 injecting, into a sandstone formation at 90°C, a 2000-ppm suspension of the esterifiable cross-linked polyol-scale inhibitor in seawater, and allowing it to equilibrate overnight (percolate), subsequently followed by core back production of the well. Hen further discusses that the extended scale inhibition life, determined by its monitoring in the production phase, provides for enhanced scale inhibition of the core walls. (Col. 5, line 60 to col. 6, line 27)

However, Hen does not disclose the crosslinked polyol scale inhibitor in the form of particles.

Bates was discussed above in paragraph #3.

Bates teaches that coated scale inhibitors in the form of particles significantly extends the life-time of the inhibitor thereby increasing the cost effectiveness of inhibitor treatment; and also teaches a process for preparing a dry mixture or powder of said particles by comminuting to provide scale inhibitor particles having an average size of between 0.4 and 3 microns (diameter of 400 to 3000 nm). (Abstract; col. 1, lines 41-45; col. 2, lines 35-52; col. 3, lines 1-24; col. 9, lines 41-67; Examples 1-2) The coating in the particles can be a dispersing agent to facilitate their suspension in an inert oil that is to be injected into the formation. (Col. 1, lines 46-64) The dispersing agent can be a

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polymer, such as a quaternized polyacrylamide. (Col. 3, line 46 to col. 4, line 8) The particle coating may also comprise a surfactant. (Col. 4, line 62 to col. 5, line 6;

Examples 3-11)

Bates further teaches that the concentration of inhibitor present may be between 1 and 5000 ppm, preferably, between 1 and 200 ppm. (Col. 10, lines 38-39). The coating of the scale inhibitor particles in a liquid suspension/dispersion in an oil (10-50% particles by weight) allows for the controlled release of the inhibitor into the formation thereby providing a significant increase in the life of the inhibitor, a reduction in the number of treatments required and a rapid return of the well to full production. Consequently, production downtime and chemical costs are reduced. (Col. 10, lines 1-38; Example 12)

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to provide the crosslinked polyol-scale inhibitors disclosed in Hen in the form of a suspension or dispersion of coated particles. It would have been obvious to one skilled in the art to do so to attain a resultant, more cost-effective suspension of crosslinked polyol-scale inhibitors that when added to a well bore treatment fluid, provides for enhanced inhibition of corrosion within the well thereby optimizing production, as taught by Bates.

Moreover, because Hen and Bates in combination disclose the same coated crosslinked polyol-scale inhibitor particles, and suspension comprising thereof, as encompassed by the instant claims, then both sets of particles/suspensions must possess the same rate of release properties as recited in claims 54 and 55.

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The limitations of claims 39 and 46 (shear rate); claim 56 (distance from well of injection); claim 57 (continuous dosage of scale inhibitor into injection water) and claim 58 (desired amount of scale inhibitor released into production) are obvious variants of Hens and Bates, in combination. Applicant has not proffered in the specification any evidence of the criticality of these features of the claimed invention that patentably distinguished it from the prior art.

Thus, the claims are unpatentable over Hen and Bates.

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to John J. Figueroa whose telephone number is (571) 272-8916. The examiner can normally be reached on Mon-Thurs & alt. Fri 8:00-5:30pm.

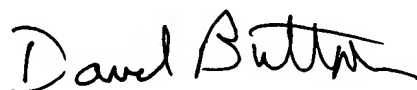
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Randy Gulakowski can be reached on (571) 272-1302. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JJF/RAG

DAVID J. BUTTNER
PRIMARY EXAMINER

A handwritten signature in black ink that reads "David Buttner". The signature is written in a cursive, flowing style.